



10/03

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,654	01/12/2001	Donnie W. Woods	005297.P007	2274

8791 7590 10/28/2003

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EXAMINER

NGUYEN, SIMON

ART UNIT PAPER NUMBER

2685

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DATE MAILED: 10/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

dl.R.

Office Action Summary

Application No.

09/759,654

Applicant(s)

WOODS ET AL.

Examiner

SIMON D NGUYEN

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-19,22-28 and 31-34 is/are rejected.
- 7) ☒ Claim(s) 4,5,20,21,29 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 6-19, 22-28, 31-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Vorenkamp et al. (6,591,091).

Regarding claim 1, Vorenkamp discloses a phase detector for generating a phase error signal indicative of a phase difference between a reference signal and an oscillator signal (figs. 17-18), comprising: an amplifier to convert said reference signal to a substantially square wave signal (column 23 lines 2-22); and a sampling phase detector to generate said phase error signal from said substantially square-wave signal and said oscillator signal (figs. 17-18, column 25 line 51 to column 26 line 67).

Regarding claim 9, this claim is rejected for the same reason as set forth in claim 1, wherein the signal converts from the reference signal is a harmonic signal and the phase error signal is generated from the harmonic signal (column 5 line 47 to column 6 line 67), wherein the harmonic signal has a rising/falling edge (fig.2, column 49 line 23).

Regarding claim 17, this claim is rejected for the same reason as set forth in claim 1, wherein a local oscillator comprising a reference oscillator for generating a reference signal and oscillator for generating an oscillator signal (figs.17-18).

Regarding claim 26, this claim is rejected for the same reason as set forth in claim 9, wherein Vorenkamp further discloses a mixer coupled to the local oscillator and the phase detector in a receiver (figs.5, 17-18).

Regarding claims 2-3, 11-12, 18-19, and 27-28, Vorenkamp further discloses the amplifier comprises a saturated amplification stage (column 23 lines 12-22) and wherein the amplifier comprises a first saturated amplification stage (e.g., 1352 of fig.13) and a second saturated power amplification stage (e.g., 1354 of fig.13).

Regarding claims 6-7, 22, and 31, Vorenkamp further discloses said amplifier comprises balanced outputs (column 23 line 63).

Regarding claims 8, 16, 23, and 32, Vorenkamp discloses a potentiometer for setting changes the signal level (fig. 35, column 40 lines 5-18).

Regarding claim 10, Vorenkamp further disclose the harmonic-rich signal is a substantially square-wave signal (column 23 line 20).

Regarding claims 13-15, Vorenkamp further disclose the harmonic-rich signal to first and second harmonic-rich signals (the I and Q signals) cycling with substantially opposite phases (column 34 lines 30-49, column 52 lines 21-34), and Vorenkamp further discloses a weighted portions are added to generate the phase error signal (column 32 lines 5-7).

Regarding claims 24-25 and 33-34, Vorenkamp further discloses a crystal oscillator (fig.17, column 22 line 65) and a dielectric resonator oscillator (column 17 lines 9-22, 50-65).

Allowable Subject Matter

3. Claims 4-5, 20-21, 29-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 4-5, 20-21, 29-30, the prior art fails to disclose a transformer for converting a single output of an amplifier to a balanced output having impedances that substantially match the respective input impedances of the phase detector wherein the amplifier converts a reference signal to be used in a phase locked loop with the phase detector.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Simon Nguyen whose telephone number is (703) 308-1116. The examiner can normally be reached on Monday-Friday from 7:00 AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban, can be reached on (703) 305-4385.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 306-0377.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314, (for formal communications intended for entry)

Hand-delivered response should be brought to Crystal Park II,
2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Simon Nguyen

October 21, 2003

A handwritten signature in black ink that reads "Simon Nguyen". The signature is written in a cursive style with a large, looping "S" and a stylized "N".